RULE 132 DECLARATION

I, Burtron H. Davis

an adult male of: 113 Lakeview Drive, Georgetown, KY 40324

do hereby declare that:

1.

I regard myself as a person skilled in the art of hydrocarbon syntheses, particular Fischer-Tropsch-type syntheses, and in this regard, I respectfully refer to my resume attached hereto as **Annexure "A"**.

2.

I have been informed that this declaration will be used as evidence in the above matter which matter, I am told, relates to a Final Office Action issued by the US Patent Office in which it is alleged that the invention of the patent application referred to above is obvious in the light of the disclosure contained in Cain et al (US Patent 2,877,257, hereinafter referred to as "Cain") in view of Moore, Jr. et al (US 2002/0173556 A1, "Moore").

3.

I make this declaration of my own free will, having been requested to do so by representatives of Sasol Technology (Proprietary) Limited, who are directing the prosecution of the patent application in issue in this matter on behalf of the proprietor.

4.

I have read the complete specification of the patent application in issue, which I shall hereafter refer to as "Bull", who is one of the inventors thereof.

5.

I have studied, and fully understand, the contents of Cain, Moore and Bull, and in this regard point out that I have in the past in several instances had to study various such patent specifications and that I am completely familiar with the style and type of language used in them.

6.

I am informed that the pending independent claims of Bull (claims 1, 25 and 32) are specifically limited to conducting a Fischer-Tropsch process in a slurry type reactor using a catalyst comprising cobalt at a temperature in the range of about 400 to 550 ^{o}F to produce a waxy paraffinic product stream and removing contamination from this waxy paraffinic product stream. Fischer-Tropsch synthesis in a slurry type reactor operates as a three-phase gas-liquid-solid process, with the suspension liquid in which the solid catalyst is suspended comprising products of the Fischer-Tropsch synthesis that are liquid at the reactor operating conditions. Two distinct product types are typically withdrawn from such a reactor, namely a gaseous phase product and a liquid phase

product. The gaseous phase product comprises unreacted gaseous reagents and lighter hydrocarbons. The liquid phase product comprises a portion of the suspension liquid. With the catalyst and operating conditions considered in Bull, the liquid product is a waxy paraffinic stream with a very low oxygenate content. Detailed chromatographic analysis does detect oxygenates, but at such low levels that it is typically not quantified. Bull states that the contamination to be removed is not filterable down to 0.1 micron and believed to comprise aluminum metal present in a complex organic matrix.

7.

I note that Cain relates to an improved process for the purification of hydrocarbon solutions of oxygenated organic compounds comprising acids and which also may contain dissolved or occluded metal contaminants such as iron or iron compounds. I further note that Cain discloses that its invention is particularly applicable to the so-called primary oil stream which is separated from the mixture of products produced by synthesis when carbon monoxide and hydrogen are reacted with a promoted iron catalyst at pressures in the range of about 150 to 500 p.s.i.g. and temperatures in the range of 550 to 700 °F (288 to 371 °C), and that this stream contains large amounts, ranging from 10 to 30 %, of organic chemicals such as acids, alcohols, ketones, aldehydes, esters, etc. The catalyst, operating conditions and high oxygenate containing product slate are typical of so-called two-phase fluidized bed Fischer-Tropsch synthesis. An important feature of two-phase fluidized bed Fischer-Tropsch synthesis is the fact that there is no continuous liquid phase present outside the catalyst particles in the reactor. Consequently, all products (and unconverted reagents) are withdrawn from the reactor in gaseous form, with liquid products resulting from subsequent cooling and condensation.

8.

I further note that Moore discloses that various types of Fischer-Tropsch processes and catalysts may be employed, with the processes as considered in Bull and Moore respectively being included among these. In addition, I note that Moore is entirely silent and provides no teaching with respect to contamination of Fischer-Tropsch products.

8.

I am told that in support of said allegation of obviousness, the USA Patent Office is averring that when Moore is using a slurry reactor, cobalt catalyst and alumina support, the product stream is necessarily expected to contain Al contamination. The USA Patent Office is further averring that it would have been obvious to modify the process of Cain by using a cobalt catalyst and a slurry reactor as suggested by Moore.

9.

I respectfully submit that I am not in agreement with said allegations, for the following reasons.

9.1 A person skilled in the art at the filing date of Bull (July 2, 2003) would have had no expectation of Al contamination in a waxy paraffinic product stream produced using the parameters claimed in the independent claims of Bull. In particular a skilled person would not have expected contamination that is not filterable down to 0.1

micron and believed to comprise aluminum metal present in a complex organic matrix.

9.2 There is no equivalent of the primary oil stream that is treated by the process of Cain (containing large amounts, ranging from 10 to 30 %, of organic chemicals such as acids, alcohols, ketones, aldehydes, esters, etc.) when conducting a Fischer-Tropsch process using the parameters as claimed in the independent claims of Bull. In particular, the waxy paraffinic stream treated in the process of Bull has a very low oxygenate content.

9.3 It consequently would have been illogical for a skilled person to modify the process of Cain by using a cobalt catalyst and a slurry reactor as suggested by Moore. Rather, a skilled person would have regarded the teaching of Cain as being irrelevant to a Fischer-Tropsch synthesis process using the parameters claimed in the independent claims of Bull.

10.

I accordingly respectfully submit that I as a man skilled in the art and, I respectfully submit, any other person skilled in the art, would not regard the Bull invention as obvious in light of the teachings of Cain and Moore.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNED AT Lexington, KY this 16 day of November 2010

Signature of Declarant

ANNEXURE "A"

Name: Burtron H. Davis

Title: Associate Director

Affiliation: Center for Applied Energy Research
2540 Research Park Drive
Lexington, KY 40511
(859) 257-0251

Education:

B.S., Chemistry, West Virginia University, Morgantown, WV, 1959.
M.S., Chemistry, St. Joseph's College, Philadelphia, PA, 1962.
Ph.D., Chemistry, University of Florida, Gainesville, FL, 1965.

Employment History:

1998-Present	Director, Catalysis Research and Testing Center, University of Kentucky, Lexington, KY.
1982-Present	Associate Director, Center for Applied Energy Research, University of Kentucky, Lexington, KY.
1977-1982	Senior Chemist, University of Kentucky, Lexington, KY.
1970-1977	Associate Professor of Chemistry, Potomac State College, WV.
1966-1970	Senior Chemist, Mobil Research & Development Co., New Jersey.
1965-1966	Postdoctorate, The Johns Hopkins University.
1962-1965	Research Assistant, University of Florida, Gainesville, FL.
1959-1962	Analytical Chemist, Atlantic Refining Co., Philadelphia, PA.

Areas of Expertise:

- Direct and Indirect Liquefaction
- Catalysis in Coal Conversion
- Analysis of Synfuels Products
- Relationship between Coal Structure and Liquefaction Behavior
- Fischer-Tropsch Synthesis

Professional Activities:

- American Chemical Society; Colloid and Surface Chemistry, Petroleum and History of Chemistry Divisions.
- Editorial Board, Fuel, Journal of Fuel Chemistry and Technology, and Energy & Fuels
- Newsbrief Coeditor, Applied Catalysis A: General
- North American Catalysis Society

- Author of more than 580 scientific publications.
- Chemical Heritage Foundation, Representative

AWARDS

- Potomac State College, Wall of Fame - 2003
- Henry H. Storch Award in Fuel Chemistry – 2002
- Outstanding Teacher Award, Potomac State College, for outstanding teaching and student support (three times in six years).
- Founders' Award in Catalysis, Tri-State Catalysis Society, 1996, Regional. The award recognizes accomplishments in catalysis.
- Industrial Scientist, Kentucky Academy of Science, State. The award recognizes outstanding accomplishment in industrial research.

Fischer-Tropsch Synthesis at the Center for Applied Energy Research

The Center's effort has expanded from operating one reactor in the late 1980s to now operating 18 reactors for both academic research and for testing catalysts for industry. Work at the Center has been funded by support from the U.S. Department of Energy (five three-year contracts for more than ten million dollara), NASA and the Naval Research Laboratory as well as work conducted for more than twenty-five industrial organizations. The work on Fischer-Tropsch synthesis has also been supported by the Commonwealth of Kentucky for more than twenty years with a total of more than ten million dollars. Thus, the Center has one of, if not the largest, laboratories for research in Fischer-Tropsch catalysis in the world.

The work on Fischer-Tropsch synthesis at the Center has resulted in more than one hundred publications in leading scientific and engineering journals. Workers at the Center have organized several national and international meetings that featured scientific reports on Fischer-Tropsch synthesis and related topics. Davis contributed to one book on Fischer-Tropsch synthesis that was sedited by two Sasol people and was an editor and contributor to another book on Fischer-Tropsch synthesis; both of these books were published within the past three years by Elsevier.

In 2002, some of the work on Fischer-Tropsch synthesis was the basis of the awarding of the Henry H. Storch Award in Fuel Science by the American Chem ical Society to Burtron Davis for his scientific work in this area.

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10. Paraffin dehydrocyclization. Competitive conversion of paraffins and naphthenes, J. Catalysis, 23, 365 (1971).

11. Carbon-14 tracer study of the dehydrocyclization of n-heptane, J. Organic Chem., 36, 337 (1971), (with P. Venuto).

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